SONARGAON UNIVERSITY (SU)

146, Wirless Gate, Mohakhali, Dhaka

REPORT ON

INDUSTRIAL TRAINING

(From 1st November 2020 to 30th January 2021)

AT

KDS GARMENTS LTD.

Oxygen, Chittagong, Bangladesh.

SUPERVISOR

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UGC & Govt. Approved

Sonargaon University (SU)

সোনারগাঁও ইউনিভার্সিটি (এসইউ)

DEPARTMENT OF TEXTILE ENGINEERING

Approval of Industrial Attachment

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ACKNOWLEDGEMENT

At first, I would like to express our gratitude to The God for his blessing that helped me to complete this report.

I am very much grateful to my Internship Supervisor, **Karul Hassan Bhuyan** Lecturer, Department of Textile Engineering, under his supervision I completed my Internship by his enthusiastic guidance and consideration during the entire phase of the study which made it possible for me to prepare this report.

I am highly indebted to **Mr.Saiful Abedin,** (AGM) HR & Admin at **KDSGarments Ltd,**to give permission for involvement at his factory. I am thankful to the authority of KDS Garments Ltd" who had kindly permitted me to have free access to their managerial people in good faith.

I am also grateful to **Mr. Gunjon Dev,** Senior Executive (HR & Administration), at **KDS Garments Ltd,** for his all-out assistance in making my effort to a successful and meaningful one.

I would like to give my special thanks to all department managers, assistant managers, production managers, in-charges, supervisors and workers of the factory, whom in spite of their busy schedule lent me their valuable time by providing information and guidance during my internship period.

My thanks is extended to the many contributors of this report, especially the various officials of **KDS Garments Ltd,** whose name I could not mention but who had made my internship worthwhile. This report would carry no value without their active support.

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LIST OF SYMBOLS AND ABBREVIATIONS

RMG = Ready Made Garments

BGMEA = Bangladesh Garments Manufacturers and Exporters Association

BKMEA = Bangladesh Knitwear Manufacturers & Exporters Association

GPT = Garments Performance Test

C & F = Cost & Freight

CIF = Cost, Insurance and Freight

CMT = Cost of Making & Trimming

CM = Cost of Making

AQL = Acceptable Quality Level

FOB = Free On Board

BL = Bill of Lading

L/C = Letter of Credit

BTMA = Bangladesh Textile Mills Association

BTMC = Bangladesh Textile Mills Corporation

AAQC = American Association of Quality Control

PSI = Pre-Shipment Inspection

CAD = Computer Aided Design

CAM = Computer Aided Manufacturing

UD = Utilization Declaration

UP = Utilization Permission

GDP = Gross Domestic Product

ISO - International Organization for Standardization

MFA = Multi-Fiber Arrangement

VAT = Value Added Tax

CNF = Clearing & Forwarding

ILO = International Labor Organization

I.Q.C = Incoming Quality Control

QA = Quality Assurance

QC = Quality Control

IE = Industrial Engineering

T/OL = Thread/Over Lock

F/L = Flat Lock

L/S = Lock Stitch

B/T = Bar Tack

B/H = Button Hole

G.S.M = Gram per Square Meter

SMV = Standard Minute Value

BT = Basic Time

CT = Cycle Time

OT = Observe Time

RFID = Radio Frequency Identification

CHAPTER ONE: INTRODUCTION

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1.1 Introduction

Internship is an important part of engineering. Internship can help me to acquire practical knowledge about my particular learning. B.Sc.in Textile Engineering program, internship is a major requirement for technical knowledge. As a requirement for the B.Sc.in Textile Engineering program I need to do the internship in any Industry that is well reputed in its field. This internship carries good grade, which shows the practical knowledge and skills that the internee carries.

We have chosen readymade garments industry to do internship and the name of the company is **KDS** Group of Industries

KDS Garments Limited is truly an excellent industry from my point of view. All types of modern and valuable technology are well arranged here. It has excellent working environment. Every section in here helps me by giving more valuable information in my training period that was very helpful for me.

1.2 Objectives

The main objective of Internship is to expose us to actual working environment and enhance our knowledge skill from what we have learned in the institute.

- To instill the good qualities of integrity, responsibility and self-confidence.
- To know the about of safety practices and regulation inside the industry.
- To instill the spirit of teamwork and good relationship.
- To develop employability skills, core of key skills, personal attributes.
- To know how to organization work.

CHAPTER TWO:
COMPANY PROFILE

CHAPTER TWO: COMPANY PROFILE

2.1 Founding

Surely every entrepreneur has an amazing story to tell: of their concepts, dreams, struggles and achievements. Their unwavering belief in their own abilities has spawned great many products and services which we have welcomed into our lives without perhaps a second thought. In this light, one such entrepreneur whose dreams and struggles have built one of the largest business conglomerates of Bangladesh, employing more than 30,000 people globally. He is the Chairman of KDS Group, **Mr. Khalilur Rahman.** Starting his journey in business from 1967, his finances were modest while his belief in himself was stern. Starting form small localized business he kept on diversifying into many areas of his interests. His love for the struggling people of his area inspired him to start exploring labor intensive ventures. Around 1983, he started his major scale garments manufacturing facility, KDS Garments, out of Chittagong. 90% of the employees of that venture were those struggling people of the area whom he was originally concerned about. Just as his other businesses, his passion for success and love for the people were the key ingredients of the formulations of this new undertaking .A keen sense of determination had enabled Mr. Khalilur Rahman to expand his empire to include many other large scale projects over the years such as textiles, garment accessories, steel, investment management, logistics, banking, insurance etc. Today, KDS group boasts a revenue base in excess of USD 500 million per annum.

Besides new business initiatives in the pipeline, his future focus is to develop the level of education significantly in his hometown, Potia, Chittagong and to contribute towards a future generation of better educated human resources to take Bangladesh ahead into the days of tomorrow.

KDS Who They Are:

KDS Group is one of the most renowned businesses and industrial conglomerates of Bangladesh, established in the port city of Chittagong but have now extended operations throughout the world. Having established offices and agencies in Singapore, Hong Kong

and the UK, with plans of expanding into the USA, the group thereby is paving the path into becoming a Bangladeshi based multinational.

Founded in 1983, through the establishment of one of the first garments industries in Bangladesh, and over the last 28 years, through innovation, dynamism, untiring effort and dedication, the business in terms of assets and revenues have grown exponentially by sometimes over 500% a year. The fields of business have also extended from being just apparel exports to a whole array of other industries. Today the total group can proudly declare over USD 500 million of annual revenues in total with over 25,000 employees, staff and workers.

KDS values human capital and is therefore committed to attract, groom and nurture talent through competitive compensations and benefit packages apart from investing in training of its potential employees under local as well as foreign trainers. KDS has engaged the internationally renowned organizational development consultants "Ernst & Young" to develop upgraded Human Resource Management practices such as appraisal through the Balance Score Card method, talent mapping, etc.

The Group adheres to international compliance requirements closely, and has taken many social initiatives for the betterment of the lives of its workforce, going even beyond foreign requirements.

KDS is always keen on taking new challenges and initiatives supported by the robust financial appetite it enjoys along with the open support of all major financial institutions in Bangladesh based on their healthy business track record with each of them.

2.2 Industries KDS is Involved

- Apparel
- Textiles
- Apparel Trims & Packaging
- Steel
- Steel Accessories
- Information & Communication Tech.
- Logistics (Off-dock/ICD/CFS)

- Shipping & Freight Forwarding
- IT Training Services
- Banking & Insurance
- Investment Management
- Shares and securities trading
- Other trading operations

KDS Garments:

Concise overview of the different business wings: KDS Garments This wing of the group is actually comprised of 6 Apparel manufacturing companies which are: KDS Garment Industries Limited, KDS Hi-Tec Garments BD Ltd, KDS Apparels Limited, KDS Fashion Limited, HN Garments Limited and KDS IDR Ltd. Altogether, the Garments sector of the Group, has earned 11 National Awards (President Gold Trophy) between 1985 to 1998 for the highest exports of readymade apparels from Bangladesh. It has also earned the following international awards and recognitions: VENDOR EXCELLENCE AWARD - 2004 from Charming Shoppes, Inc. USA, Business Innovative Director, Texas, USA, Award of AMC USA 1998,1999 & 2000, Award of KMART Apparels Corporation, USA 1998,1999 & 2000, and Award from Trade Leader Club, Spain 1992, 1993. The Garments division of the group is also among the few selected global strategic vendors of KMART, Fila, Target, Globe Trotter, Wal-Mart and many other highly prestigious global brand names and they also have exclusive supply agreements for certain product lines with some of these global companies as well. Within this division, there are sub divisions of Knit, Woven, Jackets, Washing, Embroidery, Quilting and many others, which equips the Group to be the provider of all kinds of apparel manufacturing solutions to any Apparels company worldwide. They are currently expanding their facilities and by the middle of 2009, they shall be the largest manufacturer in the Knit sector across Asia, which will be a matter of national pride as well.

2.3 Location of KDS Garments Ltd.

Fig.2.1: Location of KDS Garments LTD

Address of the Company:

Local Address:

KDS GARMENTS LIMITED

251/252 Bayezi Bostami Road ,

Chattogram

Bangladesh.

Communication Media (Local)

Phone: 880-2-881722/9883279

Fax: 880-2-8825218

Email: inf@kdsgroup.net

Foreign Address:

KDS Group

Unit B 7/F Hong Kiu Mansion, 3 Nathan Road, Jordan , Kowloon,

Hong Kong.

Communication Media (Foreign)

Phone: 825-2369-1303/236691354

Fax: 825-23110314

Email: inf@kdsgroup.net

Fig. 2.2: Front view of KDS Garments Ltd

2.4 Board of Directories

Alhaj khalilur rahman	**Chairman**	**KDS GROUP**
Mr. Md. salim rahman	Managing Director	KDS Group
Mr. Nitin Arora	Director	KDS Garments &Textile Division
Mr.Jashim Chowdhury	Vice President	KDS IDR Ltd

Management of KDS Garments Limited:

1.	Company Name	KDS Garments Limited.
2.	Group Chairman	Mr. Alhaj Khalilur Rahman
3.	Management Director	Mr. Salim Rahman
4.	Director	Mr.Nitin Arora
5.	Vice President	Mr. Jashim Chowdhury.
6.	General Manager	Mr.Ranjit Raddalgoda
7.	(AGM) Quality	Mr.Zahirul Islam Talukder (Manik)
8.	(AGM) HR & Admin	Mr.Saiful Abedin
9.	(AGM) Compliance	Mr. Uzzal Kumar Das
10.	(DGM) Maintenance	Md. Mofidul Islam
11.	Nature of Worker	Unskilled & Highly Skilled.

2.5 Bankers

Al-Arafah Islami Bank Limited	আল-আরাফাহ্ ইসলামী ব্যাংক লিমিটেড Al-Arafah Islami Bank Limited
National Bank Limited	National Bank Limited A Bank for Performance with Potential

2.6 Buyers

Brand Name	Country of Origin	Brand Logo
Target	Australia, USA	Target
George Wal-Mart	London	GW
Sears Kmart	London	Kmart
Primark	Ireland	PRIMARK
M & S	London	YOUR M&S
Walmart	Canada	Walmart

Woolworths	USA	
Mother Care	London	

2.7 Products

KDS Garments Limited manufactures and export woven garments for men's. They also produce sportswear, maternity wears as well. Their state of the art wove wears covers almost all of the fibers available in the market.

Fig. 2.3: Products of KDS Garments Limited

2.8 Departments and Sections

MERCHANDISING
PATTERN & DESIGN
INCOMING QUALITY CONTROL
QUALITY ASSURANCE
COMPLIANCE
HUMAN RESOURCE MANAGEMENT
PRODUCTION PLANNING & CONTROL
INDUSTRIAL ENGINEERING
CUTTING, SEWING, FINISHING
EMBROIDERY
ACCOUNTS AND FINANCE
INTERNAL TECHNICAL AUDIT
PURCHASE
STORE
MAINTENANCE
UTILITY
IT SECTION

CHAPTER THREE:
RAW MATERIALS

CHAPTER THREE: RAW MATERIALS

3.1 Introduction

Raw material means, fabrics and the other trimmings which all are needed to produce a garment item or apparel except the machineries and man power could be considered as raw material.

KDS use two types of raw materials for make garments:

1. Fabrics
2. Trims & Accessories

3.2 List of Fabrics

- **Knit**
- **Woven**

3.3 List of Trims & Accessories

Thread :

- Cotton
- Polyester
- Nylon
- Textured
- Viscose

Zipper :

- Vislon
- Nylon
- Plastic

Tape :

- Gross grain
- Nylon
- Twill

Label

Elastic

Carton

Sticker

Hanger

Buttons:

- Plastic
- Metal
- Snap

Draw Cord:

- Round Draw cord
- Flat Draw Cord

Polybag :

- Single Poly
- Blister Poly

Eye late

Velcro

Fig. 3.1: Raw Materials

CHAPTER FOUR:

MACHINE DESCRIPTION

CHAPTER FOUR: MACHINE DESCRIPTION

4.1 Machines of Inspection Section

Machine	Purpose	Picture
Fabric Inspection Machine • Brand: UZU • Model: UZ-F	To inspection the raw fabrics for defects.	
Fabric Moisture Meter • Brand: Aqua Boy • Model: LMIII	To test the fabrics moisture	
Hand Bar-code • Brand: Scan Pal	To read the barcode on label, cartons, polybags etc.	

Button Pull Tester • Brand: IMADA	To Pull test of button and snap	
G.S.M Cutter • Brand: Texlab • Diameter: 11.28cm	To cut the G.S.M from fabric	
Electric weight balance • Brand: SCHRODER	To measurement the G.S.M weight.	

4.2 Machines of Cutting Section

Machine	Purpose	Picture
Straight Knife • Brand: Mack • Model: KS-AU V 220 • RPM: 3000-3600	To cut the fabric layer according to the marker	

Piping Cutter • Brand: UZU • Model: UZ-899A	To Cut the piping fabric according to measurement	

4.3 Machines of Sewing Section

Machine	Purpose	Picture
Fusing Machine Brand: Cool Set	To attach interlining with fabric	
Heat Transfer Machine	To attach heat seal label on the fabric	
Velcro Cutter • Brand: Cutex • Origin: Korea	To Cut the Velcro in specific measurement	
Single needle Lock Stitch	• Label attach • Top stitch	

• UBT • Brand: Brother • Model: S-7000DD-403 • Origin: Japan	• Tack stitch	
Double needle Lock Stitch • UBT • Brand: Juki • Model: LH-3568A-7 • Origin: Japan	• Top stitch • Tack stitch	
Single needle lock stitch • Vertical edge trimmer • Brand: Siruba • Model: DL918 • Origin: Taiwan	• Automatic edge cutting • Edge joining	
Over Lock • Brand: Pegasus • Model: M952-52H • Max Needle 2 • Max thread 4 • Origin: Japan	• Automatic edge cutting • Over edge lock • Side seam, Waist band attach, Shoulder etc.	

Over Lock (Interlock) • Brand: Pegasus • Model: M932-355 • Max Needle 3 • Max thread 6 • Origin: Japan	• Automatic edge cutting • Over edge lock • Side seam, Shoulder etc.	
MNCS • Brand: KANSAI • Model: DFB-140 • Origin: Japan	• Waist Band, Top stitch etc.	
Flat Lock • Brand: Pegasus • Model: W1500 • Origin: Japan	• Bottom Rolling • Neck Binding • Piping • Top stitch etc.	
Bar-Tack • Brand: Brother • Model: KE-430F • Origin: Japan	• Pocket corner • Attach belt loops • Applied on extra force area	

Chain Stitch • Brand: Siruba • Model: L381 • Origin: Taiwan	• Joining two parts • Top stitch • Neck binding etc.	

4.4 Machine of Finishing Section

Machine	Purpose	Picture
Metal Detector Machine • Brand: HASIMA • Model: HN-770G • Origin: Japan	• To detect metal in garments	

CHAPTER FIVE:

PRODUCTION PLANNING SEQUCENCE AND OPERATION

CHAPTER FIVE: PRODUCTION PLANNING SEQUENCR AND OPERATION

5.1 Relation of Production Planning with other Department

Production planning and control department has to connect with various departments, those are mentioned in the below:

- Top management
- Merchandising
- Commercial
- Cutting
- Sewing
- Finishing & Packing

Top Management:

Relation of planning with top management is, when order is arrived in the factory then meeting with top management about how order running, how to distribute the work process, and how long time it will proceed.

Merchandising:

Planning department discuss with merchandising about the order, how to collect raw materials, about the cost of materials, sourcing other production plant (if required).

Production (Cutting, Sewing, Finishing):

Planning working with Production about,

- Plan
- Package (File/ Sample/ Pattern/Tech pack)
- Size-set Making
- P.P Meeting
- Trail Cutting

- Bulk Cutting
- Sewing

Planning distribute the order to the production floor regarding to shipment date. How many lines, how many floor will require, it will take in care by planning department.

Suppose,

Order Quantity: 20,000pcs

Ship date: Within 15 days

Product S.M.V = 9

If production start in lean line with 70 % efficiency,

Target hr. = Man power in line (25) x 60 min x 70 % / S.M.V (9)

= 116 pcs /hr./line

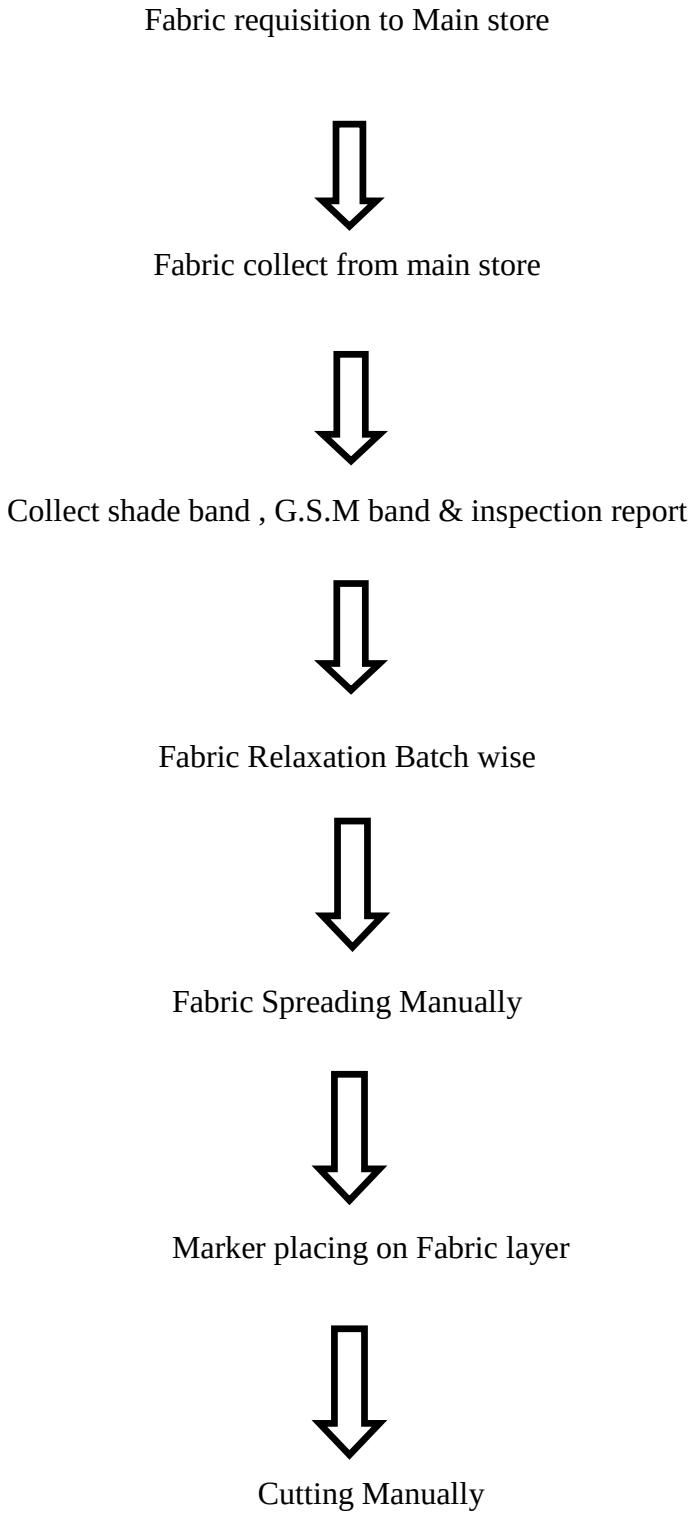
=116 x 8 = 928pcs / day / line

Daily production is 928 pcs, so completing this order we need (20,000 / 928) = 22 days.18 days in hand for production other 2 day for finishing and reserved 2 days for final inspection. So completing this order, need 2 lean lines.

5.2Cutting

Fig. 5.1: Straight Knife Cutting

5.2.1Flowchart of Cutting Sections



5.2.2 Pre-production meeting Procedures

- On receipt of the style file from planning, the unit in-charge gets the approved sample room P&D.
- Unit in-charge, reviews the sample along with the production executives, technical executive& floor QA Executive.
- After the review, Size set samples stitched in each size/color, checked for workmanship, styling, and measurement, and submitted to P&D for approval.
- Upon size set approval, the results are communicated to technical team & planning.
- Planning checks the material in-house status and calls for pre-production meeting.
- Pre-production meeting is chaired by technical in-charge and attended by representative from related floor, QA, Maintenance, Merchants, IQC, IE, planning, P&D, Stores and central QA.
- During the PP meeting following activities performed:
- Buyer approved sample is reviewed.
- Size set sample report is reviewed and the deficiencies discussed.
- Making sure of the correct trims placement.
- Highlighting potential product safety, quality & productivity issues
- Discussing print & embroidery placement and appearance as applicable
- Discussing finishing & packing details
- Discussing production plan & delivery issues
- At the end of the meeting, all the attendees sign off the minutes.

5.2.3 Pre-production meeting notes

- Product details
- Process
- Critical issue
- Line details
- Shipment details
- Guideline
- Raw materials
- Technical issue
- Layout

5.2.4 Trial cutting

- The PP meeting is conducted for a new style planned for production, Unit I/C plans the trial cut prior to the bulk production based on following:
    - Ratio in order
    - Total no. of colors
- The Cutting Executive receives the required material from store as per approved consumption for trial cutting of 200 pc per color max.
- Cutting executives receives latest rectified pattern from P & D.
- Cutting QA / Marker Man receives the Marker from P & D and checks the same against the hard pattern to ensure the correct marker is received.
- Spreading & Cutting done for max up to 200 pc.
- All the cut parts are checked against hard pattern by taking panels each from top, middle and bottom layer.
- If the cut panel matches with the hard pattern, the input is given to the line.
- 5 pcs from all sizes in each color are stitched first as 1st output.
- The 1st output in all size / all color is checked for workmanship, measurement and construction and compared with buyer approved sample and against specification.
- The findings of workmanship and construction are recorded in trial cutreport and the finding of the measurement is recorded in measurement sheet.
- If any workmanship issue is noticed, it is corrected during bulk production.
- Any construction issue is discussed with the technical manager and necessary corrective action is initiated.
- If any measurement discrepancy is recorded, then in consultation with P &D, the pattern is rectified as required, before bulk cutting.
- IF no issues found during trail cut, the bulk cutting can proceed without any corrective action.

5.2.5Finishing & Packing:

- 2 cartons from each size & color, is processed with attaching the required accessories and required ratio.

- These cartons are checked for accuracy and placement of accessories and results recorded.
- If any non-conformity is noticed, it is discussed with the finishing in-chargeand unit in-charge. The same is corrected in the bulk.

5.2.6 Relaxation procedure of Fabrics

All the fabrics, depending on the packing method and the structure are relaxed before spreading as per the below criteria:

Table 5.2.6.1Fabrics Relaxation Period

Fabric type	Relaxation time minimum
All Knit fabric in roll form	24 hrs.
All Knit fabric in folded form	12 hrs.

- The fabric is relaxed as per the criteria by opening the fabric roll and converting it in the folded form using Fabric Loosening machine.
- The following height of the relaxed roll not exceed 12”
- The fabric stored in the fabric relaxation racks and allowed to be relaxed for the specified time.

5.2.7.2 Fabric Spreading

- Cutting Supervisor divide the cutting manpower into team for spreading &cutting.
- Before starting the spreading, the cut-plan is checked, and supervisor ensures the QA assigned the marker for marker accuracy.
- The no. of layer in the in the lay is decided based on type of fabric, G.S.M etc. maximum lay height of 6”.
- At spreading, ensured the fabric fully relaxed as per the fabric relaxation procedure as decided by PTP for the style.
- Before taking the rolls for the spreading, the shade band is checked to ensure the spreading is having one batch and one shade covered in one cut number.
- Once the above points are confirmed the spreading is done as below:

5.2.7.3 Solid Fabric:

- Marked the layer length as per the marker length on the table correctly.
- Layer length has additional 2" allowance to the marker length to compensate for layer shrinkage during cutting.
- Put the spreading base paper as per the layer length & width.
- Lay the planned no. of fabric plies efficiently and correctly as per marker length.
- Ensured no tension is applied while spreading and the laying is done flat with no looseness.
- Precisely aligned one side of the layer (width wise) while spreading to avoid 'LEANING' of the layer so that CAD marker too can be placed on top of the layer aligning to that side, to accommodate for the deviations in the fabric roll width.

5.2.7.4 Stripe or Check Fabric Spreading:

- Arranged the table with metal plates according to the quality of the fabric. Here accounted the fabric bowing/skewing levels and decided the angle of the metal plates, no. of pins & the layer length based on the difficulty of the check/stripe fabric to ensure best possible cut quality & consumption.
- Laid it manually keeping pin-point's alignment accuracy with the help of a string.
- Drawn the marker manually carefully on the top-ply of the layer using approved patterns.
- After Laying of each layer, ply end cut/tear-off carefully accurately to reduce fabric wastages.
- End- bit (Cut Piece) of each roll controlled properly for future use if needed, especially for sewing section re-cutting.
- These roll balances bundled cut-wise. (i.e. put balance piece of each roll of a particular cut in to one poly bag & then write all necessary info such as style, cut on the poly bag for easy trace) and hand over to Re-cutting Division.

Fig. 5.2: Fabric spreading

5.2.8 Fabric type wise layer height:

For reduce cutting fault and smooth cutting use different layer height for different types of fabrics. Here mentions the fabric wise layer height in the bellow:

Table 5.2: Cutting layer height

Fabric Type	G.S.M Range	Plies	Inch
S/J, D/J	135-180	75-90	5
S/J, D/J	Over 200	70-85	5
1x1, 2x2 Rib	180-210	70-80	5
1x1, 2x2 Rib	210-230	60-70	5
French Terry	180-220	75-90	5
Pique	180-220	80-100	5
100% Poly Mesh	135	100-110	5
100% Poly micro twill	120-140	80-100	5
Nylon Spandex	150-210	40-45	3

Cutting Defects:

- Shade variation
- Tension variation
- Wrong pattern cutting
- Uneven Cutting

5.2.9 Numbering & Bundling

- Numbering after cutting is very important as it bears some significant information. The process of numbering starts from the time of spreading. Numbering ensure to Produce a good quality garment avoiding shading within the garment, pack garments having one shade in one carton and have the traceability in case of any issue.
- Stickers' gum quality has to be chosen according to the fabric. This has to be checked before starting every new style. Not doing this will be led to unnecessary issues.
- After completing the garment, the product Checker check the sticker to confirm that garment is stitched following the numbering stickers.
- After garment is checked by product checker, leave one sticker in the garment and remove rest of the stickers. The sticker that we leaved in the garment goes to packing and following same should pack in such way where one carton should have garments in one shade (following Batch No). The last sticker should be removed just before inserting the garment to Poly bag.

Fig. 5.3: Numbering system

	Cut No	Size	Serial No
E.G →	**01**	XXL	999

- All the panels are numbered as per above system.
- Above mentioned procedure are displayed in cutting.

5.2.10 Process Lay Out of Re-Cutting

Check the part no on the the panel

⇩

Identify the defective cut

⇩

Check the spread sheet

⇩

Identify the fabric batch roll

⇩

Check the cut pieces from small roll

⇩

Spread the cut pieces on re-cutting table

⇩

Cutting manually

5.2.10.1 Re-cutting procedure:

- 100 % of the cut panel is checked at the input table. If any panel is rejected due to any quality reason and need replacement is given to the re-cut table for replacement.
- The person responsible checks the numbering sticker on the panel and note the panel description, size & cut.
- The spread sheet is taken for the respective cut and from the numbering sticker, the roll, batch& Shade group is identified from which the panel is cut.
- The re-cutter checked the end bit (cut piece) stock and verified if the enough end bit is available in respective roll for replacement cutting.
- If the rolls do not have enough ends bit, check for the end bit is same batch & shade.
- If there required end bit stock is not available in the same batch & shade, then the re-cutter will select the end bit from different batch by matching the end bit shade with panel shade under customer recommended light sources including measurement check.
- The replacement panel is cut as per the requirement and given to the input table as replacement by transferring the defective panel to NCM box.

Fig. 5.4: Re-cutting area

5.3 Sewing

Fig. 5.5: Sewing floor

5.3.1 Flow Chart of Sewing Sectio

File received from planning section

⇩

File check

⇩

Sample

⇩

Input bundle with report

⇩

M/C Layout

⇩

Fusing

⇩

Operation running

5.3.2 Fusing

Fig.5.6: Fusing Process

5.3.2.1Purpose of fusing:

- To hold the shape
- To support the garments
- To control area of garments

5.3.2.2Fusing requirement:

- Pressure :1.5 keg's
- Speed: 12 rpm
- Time: 10-20 sec as per buyer requirement
- Bonding strength: 7-8 N
- Thermal stripe: 150-170c

5.4 Fusing Strength Test:

Fig5.7: Fusing Strength Test Machine

5.4.1 Purpose:

- To ensure the interlining bonding streanth with fabric
- To ensure the buyer requirment

5.4.2 Fusing faults:

Fig.5.8: Fusing Faults

5.4.3 Different types of stitch

STITCH NAME	PICTURE
6T/OL (Interlock) • **3 needle thread** • **3 lopper thread**	
Bar-tack • **1 needle thread** • **1 bobbin thread**	

5T/Flat lock

- **3 needle thread**
- **2 lopper thread**

5T/OL(Interlock)

- **2 needle thread**
- **3 lopper thread**

4T/Flat lock

- **2 needle thread**
- **2 lopper thread**

Chain stitch

- **1 needle thread**
- **1 lopper thread**

MNCS (Kansai)

- **4 needle thread**
- **4 lopper thread**

3T/Over lock

- **1 needle thread**
- **2 lopper thread**

2N/Lock stitch

- **2 needle thread**
- **2 bobbin thread**

4T/Over lock

- **2 needle thread**
- **2 bobbin thread**

Table 5.4: Sewing machine needle

Needle Code	M/C Name	Needle size in mm	Singer No
DBX1	Lock stitch	38mm	9,10,11,12,13,14
DCX1	Over lock	33mm	9,10,11,12,14
DPX5	B/T, B/H, 2N/LS	38mm	9,10,11,12,14
DPX17	B/A	44mm	11,12,14
UYX128	F/L	45mm	9,10,11,12,14
UOX113o	MN/CS	41mm	12,13,14,16

Table 5.5: Sewing Defects

Drop stitch
Seam puckering
Seam appearance loss in body
Loose thread
Thread cutting
Stitch density attach
Broken needle
Needle thread breakage
Needle Hole

5.7 Industrial Engineering (IE)

At present Industrial Engineering (IE) is one of the important departments for each garments or textile industry. Today maximum factory run by industrial engineers.

5.7.1 Process Flowchart of Industrial Engineering (IE):

Negotiation with garments merchandiser

↓

Garments analysis

↓

Make P.P meeting if all the required fabrics, trimmings and accessories are in housed

↓

Production target

↓

Set machine layout

↓

Line setting

↓

Line balancing

↓

Continuous production meeting

↓

Collecting production data

↓

Preparing production report

↓

Production report analysis

↓

Report submit to factory manager

5.7.2 Sewing floor specific working condition:

- Temperature: 25°c
- Lighting: Vary with the work place
- Humidity: 40% - 70%
- Ventilation: Air 8 Ltr/ sec
- Smell: No odour smell
- Sound:90db- 100 db

5.7.3 Calculation method of sewing line capacity:

To calculate sewing lines capacity of a garment factory, an industrial engineer has needed the following information:

1. No. of sewing machines in the line,
2. Workers absence percentage of that line,
3. Daily working hours of that factory,
4. Line efficiency of that factory,
5. S.M.V
6. Sewing line capacity (In pieces)

$$= \frac{[\{(\text{No.of machine in the line} \times \text{working hours }) - \text{Workers absence \%}\} \times \text{Line efficiency}]}{\text{SMV}}$$

5.7.4 Machine Capacity Calculation:

For calculating machine (hr) capacity in garments industry, we have needed the following information:

1. Sewing line in factory.
2. Machines in each sewing line.
3. Working hours per day.

Machine capacity = No. of sewing line in factory × No. of machines in each sewing line × Working hours per day.

5.7.5 Machine Lay Out

Machine layout means to arrange machines in a way so that we can get a complete body in a minimum time without any bottle neck problem. Machine layout is different for different styles. In KDS Garments Company Ltd. IE & Planning is working for process breakdown, machine layout for sewing a body and improving production.

A good layout is that physical arrangement, which permits the product to be produced with minimum unit cost in the shortest time.

KDS Garments Company Ltd used :

18 standard operators, 2 helpers for lean line and 36 standard operators, 10 helpers for big line production.25 conventional or big line and 16 lean lines. Total Production floor: 05

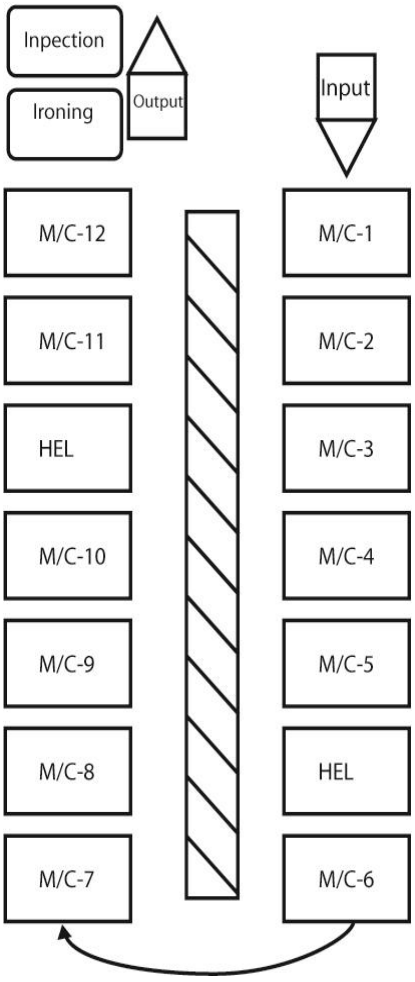


Fig. 5.9: Machine Layout of lean line

5.6 Layout Analysis of Swim Short

SL.	Operation	Machine	Central Table	SL.	Operation	Machine
			Back Part			
01	Back Rise Joining	2N/OL		**02**	Top stt. On back rise	2N/CS
03	Pocket Mouth rolling	1N/LS		**04**	Marking for back pocket	Marking tble
05	Balcro Joining	1N/LS		**06**	Pocket Pressing	Pressing m/c
07	Pocket Marking on back part	Marking table		**08**	Pocket Joining	1N/LS
09	¼ On pocket	1N/LS		**10**	Back pocket flap ironing	Presing table
11	Flap joining	1N/LS		**12**	¼ On Flap	1N/LS
13	Balcro marking on flap	Marking table		**14**	Balcro joining	1N/LS
15	Flatp edge O/L	1N/OL		**16**	Flap joining	1N/LS
			Front Part			
17	Front rise over locking	2N/OL		**18**	Front table marking	Marking table
19	Side pocket mouth closing	1N/LS		**20**	Pocket joining	1N/LS
21	¼ On top	1N/LS		**22**	Pocket bag tuck	1N/LS
23	Side pktjoining	1N/LS		**24**	Top stt.On pkt	1N/LS
25	Front and back part matching	Matching table		**26**	Side seam	1N/LS
27	Side seam top stt.	1N/LS		**28**	Side seam O/L	1N/OL
29	Label Joining	1N/LS		**30**	Inseam joining	1N/LS
31	Inseam O/L	1N/OL		**32**	Inseam top stt.	2N/LS
33	Waist brand marking	Marking table		**34**	Elastic tuck	1N/LS

35	Elastic joining in waist	Kansar		**36**	Elastic joining with mesh fabric	1N/OL
37	Elastic tuck at side seam point	1N/LS		**38**	Mesh side seam	2N/OL
39	Mesh joining with body	1N/LS		**40**	Waist brand O/L with mash	1N/OL
41	Level joining	1N/LS		**42**	Bottom rolling	2N/LS

5.8 Finishing

Garments finishing is an important section in **readymade garments sector**. It's the last section of **garments manufacturing** department. As all the others section of garments manufacturing, garments finishing section has also followed a process flow chart

Fig: 5.10 Finishing Process

5.8.1 Process Flowchart of Finishing

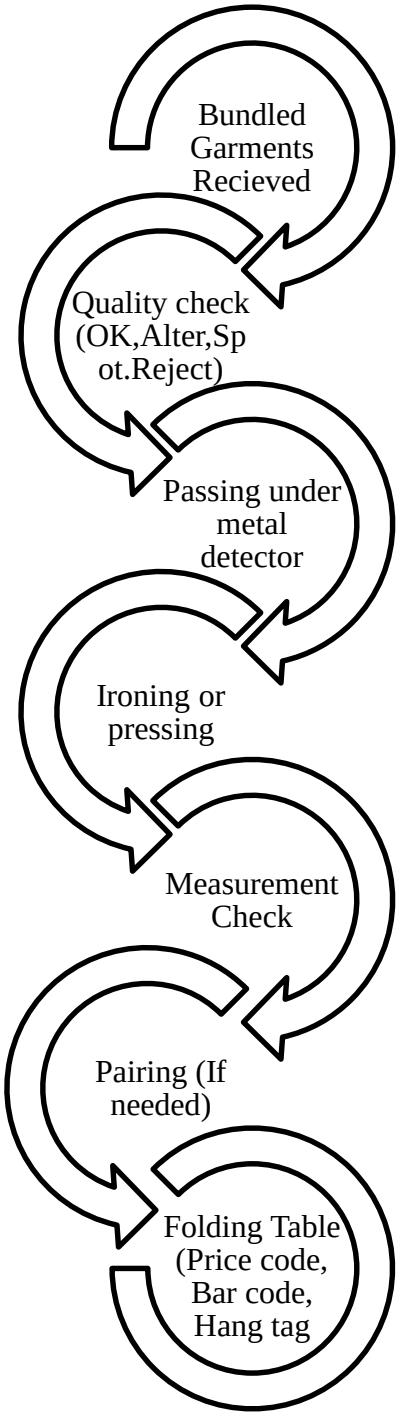


Table 5.7 Procedure of Finishing Process

S/L	Process	Procedure
01	Sewn garments received in finishing section	Here, sewn garments are received for finishing the garments.
02	Initial quality check	Sewn garments are checked here by the quality controller. If found major sewing problems then garments sent again to the sewing section for rectification.
03	Spot removing if there's any spot	Sometimes garments contain various types of spots which are removed here carefully.
04	Ironing or pressing	It's one of the important processes in garments finishing. Here garments are ironed by following measurement chart of that garments.
05	Inspection	After completing ironing or finishing, garments are inspected again here by quality controller to confirm the correct measurement of the garments.
06	Hang tag attaching	In this section, hang tag have to attach with the garments.
07	Folding	After completing all the above processes, garments are folded here.
08	Poly bag	Garments are poly bagged here to keep the garments dust, dirt and other

		impurities free. Send the garments safely in to the buyer.
09	Metal check	In this section, garments should be passed through a metal detector machine to identify metal lies in the garments.
10	Packaging or cartooning	Finally all the garments should pack to send the garments safely in to the buyer.

5.8.3 Metal Detecting Process:

- Flow garments through the metal detector
- If found any metal in any garment, stored the garment in red box
- Check this garment by hand metal detector
- Take out the metal from garment
- Again flow garment through metal detector

Fig. 5.11: Metal detector

CHAPTER SIX:

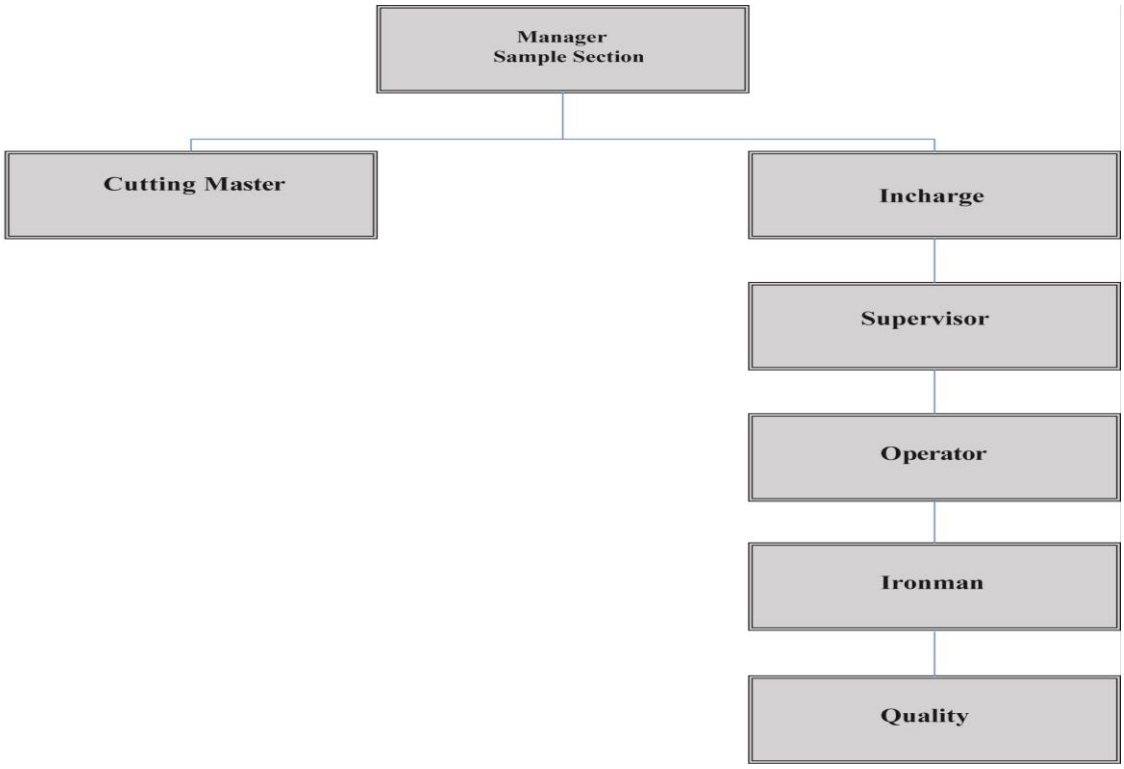
PATTERN AND DESIGN

CHAPTER SIX: PATTERN AND DESIGN

6.1 Sample

Sample is one of the most important for garments industries. Garments sample play an important role for receiving s garments export order.

6.1.1 Organogram of Sample Section



6.1.2 Procedure of Sample Section

The procedure of the Sample Section is started from the Development of the sample to Production sample.

- Development sample,
- Proto sample,
- Fit sample,
- Size set sample,
- Counter sample,
- Salesman sample (SMS),
- Pre-production sample (PPS),

- Top over production sample (TOP),
- Shipment sample.

Development sample:

Which sample developed by factory own self and make by available fabric & accessories and send to buyer to collect order from the buyer that is called development sample.

Proto sample:

It is the very first sample given into the buyer. It is prepared according to the buyer's specification. It is a trial sample prepared on product development department. Buyer wants to see here that how its look likes after applying new design on it. Any types of fabric and color can be used here. For this types of sample 2-3pcs of garments should be made and where 1pc for manufacturer and rest of those are sent to the buyer for correction.

Fit sample:

After approving proto sample, fit sample should be made by following buyer provided measurement sheet. It can be made by using similar fabric, nearer **GSM** and any color. In Fit sample, stitching and measurement must be 100% accurate. Here fabrication and color can be changed but no compromise on stitching and measurement. 2-3 garments are used in fit sample where 1pc kept by the manufacturer and rest of those are sent to the buyer.

Size set sample:

After approving fit sample, based on the patterns of approved sample, all the other sizes samples should be graded here and make pattern for different sizes. After that, make 2-3pcs sample for each size of that order. Manufacturer keep 1pc sample for him and send 1pc or 2pc samples to the buyer for cutting approval. Here, it should be noted that, without the size set sample approval, cutting should not be started.

Counter sample:

This type of sample is based on the comments received from the buyer. For this sample, 2-3pcs garments are required.

Salesman sample (SMS):

Salesman sample is used by sales team of buyer to enhance the sales of any garment. Buyer sends the sample by salesman in the market to receive market feedback from the customers. It is done approximately 200-500pcs depending on the customers and season. The main objects of SMS sample are to check market, feedback, Buyer's design etc.

Pre-production sample (PPS):

P.P sample should be made in actual production line by maintaining all actual of an order specification. It is the main stage of a garments order where any sample may be approved or rejected. If the sample will approve, then it can go for the rest of the process of that order. But if rejected then there will be the revision of previous processes. PPC (Planning production and control) department is also involved in this stage. Ones PPC department is involved then there's no way for accepting of any style change. It is the very critical stage than other's stage. Extra care must be needed here to confirm an order correctly.

Top of production sample (TOP):

During running an order in production line, a few samples sent to the buyer or buyers Q, C as TOP sample. TOP sample has a great importance in achieving certification of whole order. If TOP sample failed to approve its required quality, then whole order will be resumed.

Shipment sample:

Shipment sample is needed after completing final inspection, when goods are ready for the shipment. It is a sample that reflects what buyers will receive down to Q.C, folding, tagging, bagging, labeling and final packaging included.

Table 6.1: Different Sizes used for different Buyers

Sl.	Sizes	Buyer
1	XS, S, M, L, XL, XXL	H&M, Primark, Penneys,
2	8, 10, 12, 14, 16, 18, 20	Primark, Penneys, Zara, Forever21
3	36, 38, 40, 42, 44, 46	Primark, Penneys, Zara, Forever21

4	7/8, 9/10, 31/32, 33/34	Primark, Penneys, H&M, Peacock,Tema
5	14,16,18,20,22,24,26,28	Primark, Penneys, Peacock,Tema

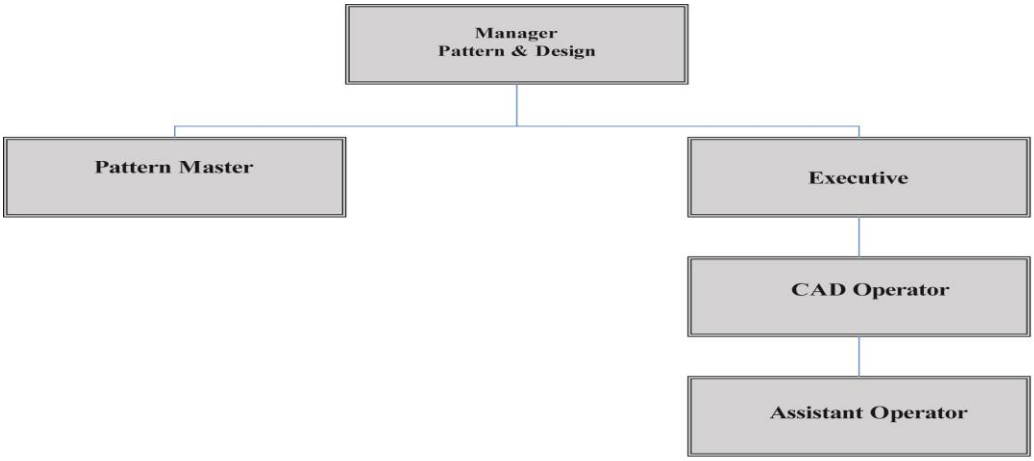
6.2 Pattern and Design

Pattern & design department is a technical department where a sample of garment is prepared as per buyer requirement. It is also called as sample room. It is very important for any garment industries.

Basically P&D Dept. work through Marketing Dept. Marketing Department collect the buyer specification sheet & then they provide the specification sheet in P&D Dept. for proper consumption & buyer expected sample.

A Process of a new order starts from P&D Dept. Marketing department always monitor the P&D Dept. basically it is a technical side, Employee skill, find various problem & its solution etc.

6.2.1 Organogram of Pattern & Design Section



P & D Dept. itself is mini production floor as it has:

- Pattern Section.
- CAD Section.
- Cutting Section.
- Sewing Section &
- Finishing Section.

Function of the pattern section is to mark manual paper pattern. There are seven pattern marks in pattern section. They receive the buyer specification sheet from P & D manager for making a paper pattern against the specification sheet.

6.2.2 Pattern Section Activities:

- Pattern Section from Spread Sheet.
- Marking size set pattern: Pattern Section prepare size set pattern for bulk production.
- Pattern rectification: While marking sample the sample making section need to make some adjustment with the basic pattern to make the sewing system much easier & also to bring the shape in the garment. These adjustments are recorded &informed & to the concern pattern maker. Then the pattern maker rectifies his original pattern with those adjustments.

Table 6.2: Different parts of a garment

Shirt:	***Jacket:***	***Hooded Jacket:***
Polo Shirt: • Front part • Back part • Sleeve • Pocket • Collar • Band • Yoke • Cuff • Cuff placket • Front placket	***Fleece*** • Front part • Back part • Sleeve • Yoke • Zipper Facing • Pocket Bone • Collar (Self fabric) • Pocket Back • Back Neck Tape • Zipper Puller	***Woven*** • Back part • Front part • Sleeve • Hood • Back Yoke • Cuff Rib • Front Angle Pocket • Pocket Back • Zipper Facing/Pocket Facing
Polo shirt: • Font part • Back part • Sleeve	***Long pant:*** • Waist band • Front part • Back part	***Lining:*** • Back part • Front part • Sleeve

• Pocket • Collar • Rib • Front placket • Moon	• Loop • Zipper Fly • Pocket Facing • Back Pocket • Pocketing.	• Hood • Back Yoke

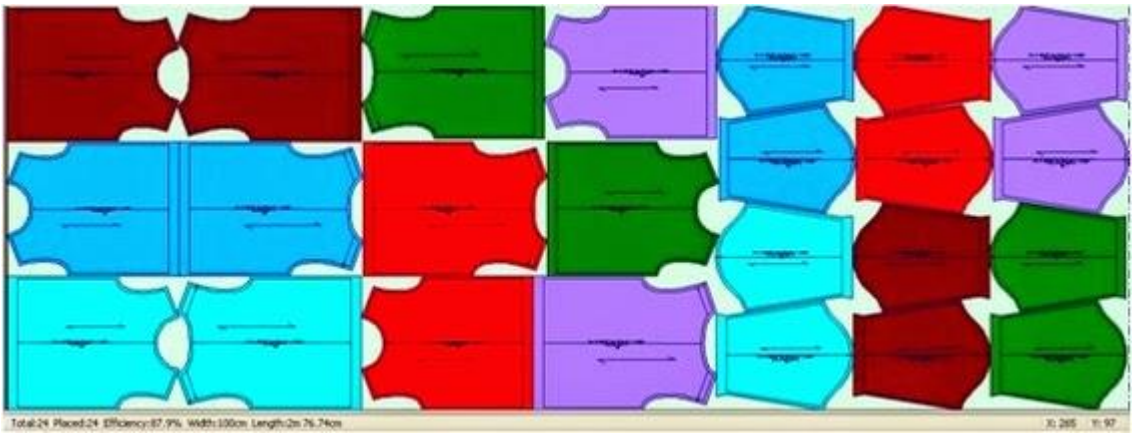


Fig. 6.1: Computer Aided Design

6.2.3 Machine Used in P&D

Pattern Cutter Machine:

Graphtec Cutting Pro (FC 2240/2250-180):

The FC2250 Large Format flatbed cutting plotter is available in 3 table sizes: 24″x36″, 47″x36″ and 68.5″x36″, with optional tool head configurations and material

Fig.: 6.2 Pattern Cutter Machine

Features:

- Dual Head Design: 500/1000 grams Cutting Force
- 2 Media Hold down methods available: Electrostatic or Vacuum
- Operate in Horizontal or Inclined Model (Vacuum table-horizontal only)
- D-Cut Software imports DXF Data x
- Cutting Master Plug-in for Adobe® Illustrator
- 0.118″ (3mm) Blade for cutting thicker material up to E Flute

Plotter:

The UWP (Ultra Wide Printer) DOT Series from TKT Brainpower includes the ultimate in inkjet technology electronics, software control and cutting-edge long-lasting distinguished European design. Materials used for manufacturing are high quality and eco-friendly allowing an almost 100% recycling at the end of its life-cycle, and are deliberately coded for this purpose.

Carbon footprint program Machine4trees in alliance with BiomasadelGironès S.L. The ergonomics and the extremely user-friendly operation represent a new standard which are not previously encountered in conventional designs. The DOT Series allow users to operate the large format plotter (UWP) after a very short training phase. Due to the low energy consumption, silent operation and integrated quick and easy frontloading system, the DOT series plotters are ideal for factory and office environments, requiring less space and electricity.

Fig. 6.3: Plotter

CHAPTER SEVEN:

STORE AND INVENTORY CONTROL

CHAPTER SEVEN: STORE & INVENTORY CONTROL

7.1 Organogram of Store

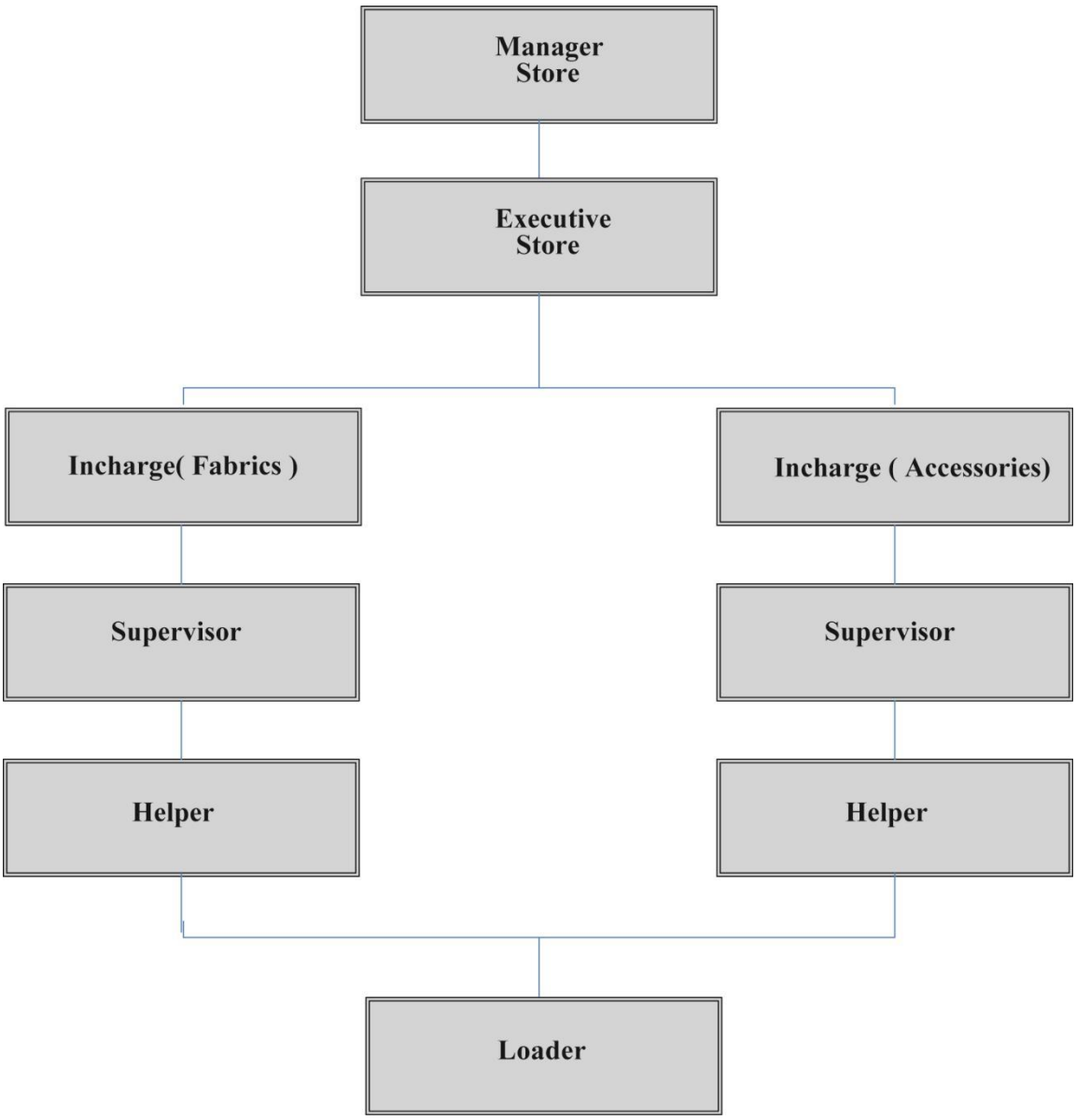


Figure 7.1: Fabric Storage Area

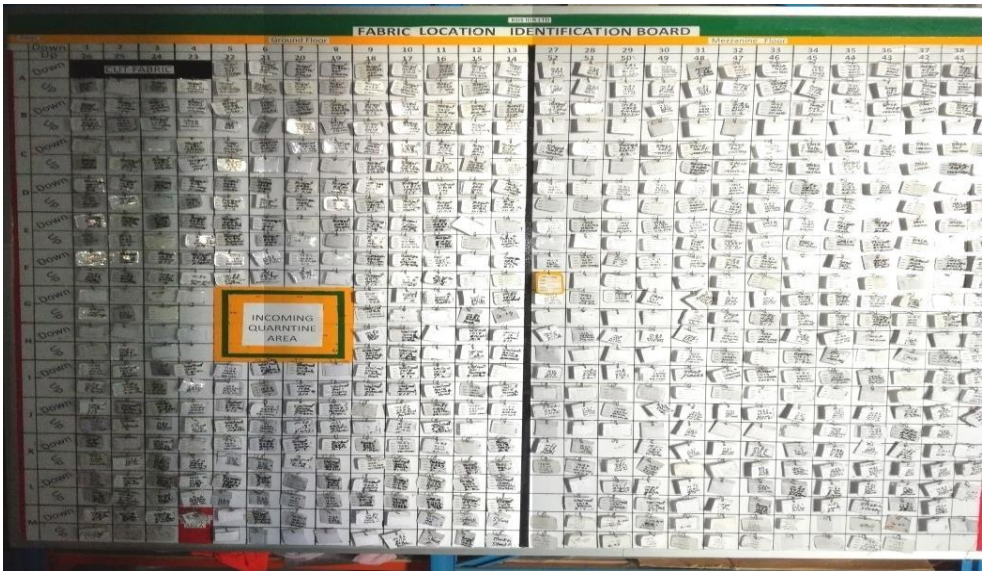
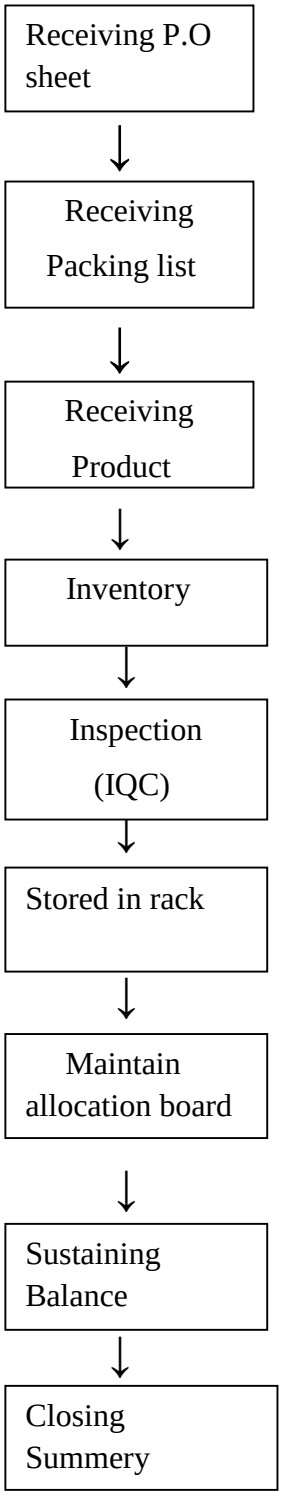


Figure 7.2: Fabric Allocation Board

7.2 Flowchart of Store



7.3 Fabrics Receipt, Issue & Storage

Purpose & Scope:

To receive, issue and store of the various fabrics for KDS Fabrics Ltd.

Responsibility:

The designated store officer / Jr. Executive / Executive are responsible for this process.

Procedure of receiving:

1**.** Fabrics or Trims & Accessories received against Purchase Order (PO Sheet), Performa Invoice, Commercial Invoice, Shipping Advise & packing list.

2**.** Consignments basis packing list file job wise and buyer wise.

3**.** Communicate with the C&F for the approximate in-house date of the import fabrics consignment and reserve the storage space for the new consignment.

4.Once the consignment is in-house, check for the security seal for gate entry.

5**.** Un-loading process done by tally counting.

6**.** After received the goods, short out the goods regarding the summary packing list.

7.4 Bin Card

it is use for stoke the raw materials. Normally factory ordered some extra quantity of raw materials against an order. if in production line defect percentage occur more then have a possibility shortage in total production of an order, the extra raw materials use for fill up the shortage quantity. But most of the time it is not happen and the extra raw materials stoke in stores instead of selling it. Bin card contain valuable information with regard to receipt and issue of materials which is generally helpful in exercising a system of inventory control. these cards are further helpful in determining various levels of materials.

Bin Card

Product Name: ..... Bottle Size**: ……**

Balance Brought Forward: ..... Date: .....

Date	In	Out	Total on Hand

7.5 Inventory Check

Inventory check as per packing list done by below procedure:

1. Buyer wise.
2. Fabrics construction wise.
3. Color wise.
4. Style wise.
5. Lot and Batch wise.
6. Size wise.
7. Storage

- After completing the inventory bulk fabrics lot wise storage at Go-down with bin cards pasted at are all cards and attached with Yellow stickers indication waiting for IQC check.
- After IQC check all pass fabrics batch wise keeping at rack with Green stickers in bin cards.
- After IQC check whatever rejected fabrics all Red stickers attach in bin cards.
- Style wise Fabrics Swatch making with Merchandiser approval.
- Inventory receiving reports provided to Merchandising Department, Commercial & Planning Department basis on physical inventory.
- Update to concerned department about shorts issue, wrong delivery & various problems by the e-mail from the store

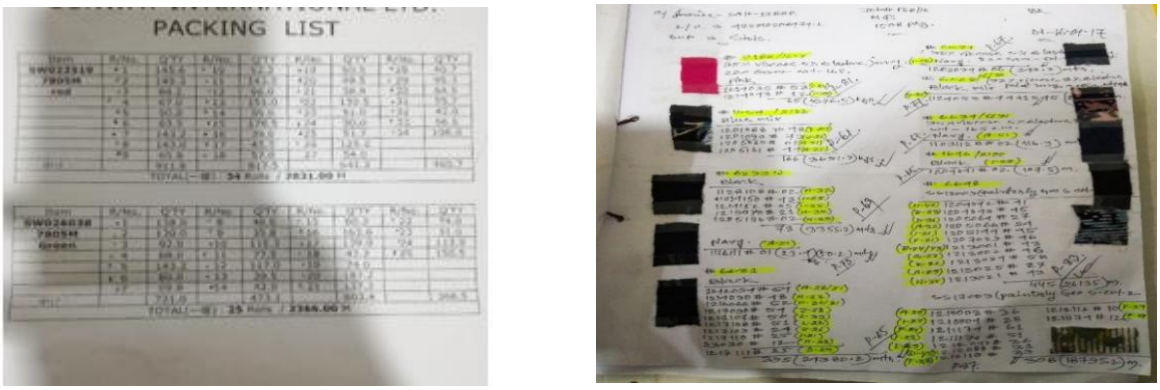


Fig7.5: Documents of store

CHAPTER EIGHT:

MAINTENANCE

CHAPTER EIGHT: MAINTENANCE

8.1 Maintenance of Machinery

Maintenance of machinery is very essential mechanical effort for achieving smooth running of different machines. Maintenance is a process by which equipment is looked after in such a way that trouble free services and increased machine life can be ensured and specific product quality required by the customers is sustained. On time maintenance increase m/c lifetime & ensures trouble free services.

8.2 Objective of Maintenance

- To keep the factory plants, equipment's, machine tools in an optimum working condition.
- To ensure specified accuracy to product and time schedule of delivery to customer.
- To keep the downtime of machines to the minimum thus to have control over the production program.
- To keep the production cycle within the stipulated range.
- To modify the machine tools to meet the need for production.

8.3 Implementation of Lean Manufacturing:

Lean principles have been originated from Toyota's production system known as just in time (JIT) production. The term lean has become widespread after the publication of a book titled The Machine That Changed the World. Then, the term lean production was widely used. Sullivan et al. KDS GARMENTD LTD. implemented the Lean manufacturing concept in maintenance to evaluate the performance of equipment replacement decision problems.

They utilized VSM as a road map for providing necessary information for the analysis of equipment replacement decision problem in lean manufacturing implementation.

The tools and techniques of lean manufacturing include TQM, TPM, Kanban, Kaizen, SMED, Poka-Yoke, and visual control. They have used axiomatic design theory for developing hierarchical structure to model a design process of lean production system composed of functional requirements, design parameters, and process variables. They have presented a new approach for a complex production system based on seven iterative steps associated with typical industrial engineering tools including VSM. They have defined the measures of lean production. They have mapped the various conceptual lean strategies

8.4 Types of Maintenance

8.4.1 Breakdown Maintenance (BM):

This type of maintenance states the maintenance strategy, after the equipment failure equipment is repaired. This maintenance strategy was mainly implemented in the manufacturing organizations before 1950. In this stage, machines are serviced only when repair is required. This idea has some weaknesses such as the following: unplanned stoppages, excessive damage, spare parts problems, high repair costs, excessive waiting and maintenance time, high trouble shooting problems.

Preventive Maintenance (PM):

This concept is a type of physical checkup of the equipment to prevent equipment breakdown. Preventive maintenance includes activities which are started after a period of time or amount of machine use. This type of maintenance depends on the estimated probability that the equipment will break down in the specified interval. The preventive works are as follows lubrication, cleaning, parts replacement, tightening and adjustment.

Predictive Maintenance (PDM):

Predictive maintenance is often mentioned as condition based maintenance (CBM). In this strategy, maintenance is started in response to specific equipment condition or performance deterioration. The analytic techniques are organized to measure the physical condition of the equipment such as temperature, noise, vibration, lubrication, and corrosion. When one or more of these indicators reach a set deterioration level, maintenance initiatives are assumed to restore the equipment to desired condition. This means that equipment is taken out of service only when direct evidence exists that deterioration has happened. Predictive maintenance is based on the same principle as preventive maintenance. The advantages of predictive maintenance are based on the need to perform maintenance only when the repair is really necessary, not after a specified period of time.

Corrective Maintenance (CM):

The main core of this concept is to prevent equipment failures. This type of maintenance system has been applied to the improvement of equipment; hence the equipment failure can be removed (improving the reliability) and the equipment can be simply maintained (improving equipment maintainability). The main difference between corrective and preventive maintenance is based on the time of maintenance action. In the corrective action system a problem must exist before corrective actions are taken. The corrective maintenance is following some purposes such as reliability, maintainability, safety, reducing design weakness, reducing deterioration and failures, aiming at maintenance-free equipment.

Maintenance Prevention (MP):

This type of maintenance system is based on the design phase of equipment. Equipment is designed such that they are maintenance free and an ideal condition of "what the equipment and the line must be" is attained. In the development of new equipment, MP activities must begin at the design stage of equipment. Maintenance prevention often applies some earlier equipment failures and feedback from production areas to ensure equipment design for production systems.

8.5 Maintenance for Sewing Machine

Lubrication:

Since the life of the m/c and its correct working depend to a large extend adequate and proper lubrication. It is recommended that the instructions given in the lubrication charts be followed conscientiously. The Company cannot be need responsible for faults that arise from wrong or inadequate lubrication.

Oiling Needles:

Too much oil is preferable to too little. Dark vertical lines in the fabric originate not from excessive oiling.

The Cleaning of Needle:

Thin oil is most suitable for this work, about one point heated to a temperature not exceeding 160ºF poured into the oiling position of the m/c.

General Cleaning Schedule:

Long m/c life, maximum output & trouble free running depend upon proper care and maintenance. A general overhaul should take place annually when single shifts are worked & correspondingly at more frequent interval.

Maintenance Procedure:

- For there is any mechanical fault of machine, which is responsible for production hamper, operator informs mechanical fitters in duty. Mechanical fitters come and observe the problem firstly, and then they begin to fix it.
- If mechanical fitters were unable to fix it, then they inform technical in-charge, he then comes in spot and fixes it.
- For there is any electrical problem of machine or serious founding mechanical problem, mechanical and electrical department are informed, they come and fix the problem.

Table 8.1 Maintenance Tools & Equipment's and their Function

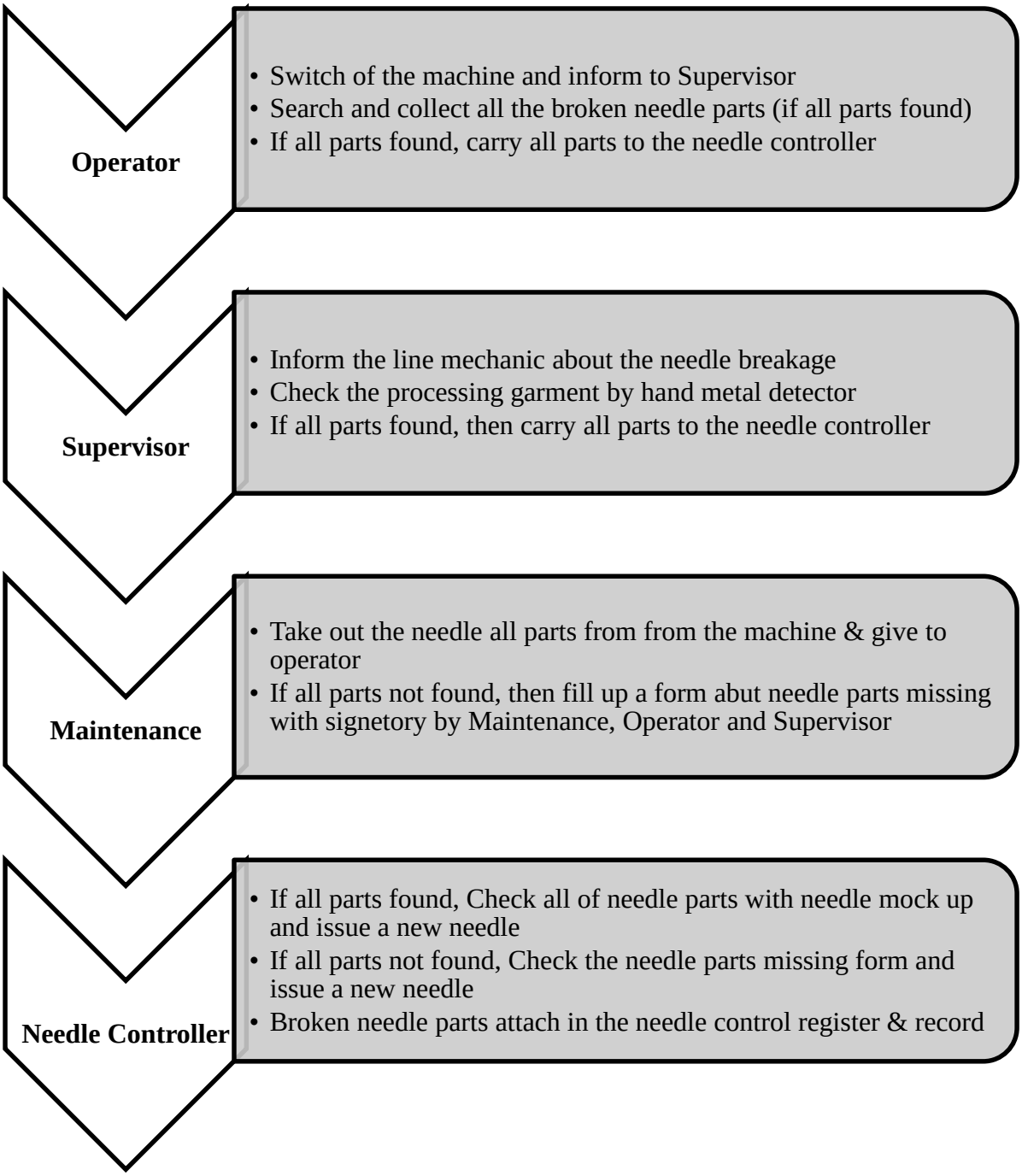
Maintenance tools & equipment's	Function	Figure
Adjustable wrench	Used for setting nut & bolts	
Air suctioned	For cleaning machine	
Spanner	Fixed Spanner for nut & bolts fitting	

Socket spanner	Handle system for nut & bolt fitting	
Hammer	To apply load where required	
Screw driver	To release any screw	
Punch	Used to fit any worn out shaft	
Lock opener	To open the clip of bearing	
Hack saw	To cut any metallic thing	
Outside calipers	To measure outside dia	

Inside calipers	To measure inside dia	
Cutting pliers	To cut thin wires	
Pulley key	To loosen pulleys	
Chain ton	To lift heavy load	
Welding machine	To join metallic parts	

Grinding machine	To make the smooth fabrics	
Tester	To test electric circuit	
Pliers	To grip anything & cut anything	
Star screw driver	Screw unlocking	
Steel tape	To measure length, width & height	
L-key	For loosen & tighten the screw	

8.7 Broken Needle Handling Process


Operator
• Switch of the machine and inform to Supervisor
• Search and collect all the broken needle parts (if all parts found)
• If all parts found, carry all parts to the needle controller
Supervisor
• Inform the line mechanic about the needle breakage
• Check the processing garment by hand metal detector
• If all parts found, then carry all parts to the needle controller
Maintenance
• Take out the needle all parts from from the machine & give to operator
• If all parts not found, then fill up a form abut needle parts missing with signetory by Maintenance, Operator and Supervisor
Needle Controller
• If all parts found, Check all of needle parts with needle mock up and issue a new needle
• If all parts not found, Check the needle parts missing form and issue a new needle
• Broken needle parts attach in the needle control register & record

CHAPTER NINE:

UTILITY SERVICE

CHAPTER NINE: UTILITY SERVICE

9.1 Utility Service

Utility services include telecommunications, electrical utilities, natural gas, certain transportation services, and also water and wastewater treatment services provided by private companies. The Division does not represent consumers of water and wastewater services provided by city and county government agencies.Large firm that owns and/or operates facilities used for generation and transmission or distribution of electricity, gas, or water to general public.

1. Utility Section is designed to support and ensure uninterrupted production by different Units.

2. IDRhas well set Maintenance Team to meet all types of maintenance requirement of the Production Units. Here emphasis is given on 'Preventive Maintenance'. Daily, Weekly, Monthly, Quarterly or any other periodical maintenance program are set ahead and strictly implemented. Section In-Charge of different Units is responsible for ensure Pre & Post operation maintenance. Maintenance Record/ Documents are checked regularly by the Senior Management.

3. Factory Complex is also connected with REB Electricity supply. Besides, it has stand by Generator run by Gas fuel.

9.2 Types of Utility

From Utility

Due to change in form there is change in utility, e.g. Wood when transformed into furniture, utility will increase.

Place utility

When goods transported from one place to another place utility can increase. For example, apple will fetch more prices in other part of country than in Kashmir and Himachal Pradesh.

Time utility

By storing a commodity and selling it at a time of scarcity, utility can be realized

Generator:

A gas generator usually refers to a device, often similar to a solid rocket or a liquid rocket that burns to produce large volumes of relatively cool gas, instead of maximizing the temperature and specific impulse. The low temperature allows the gas to be put to use more easily in many applications particularly to drive turbines. Gas generators are used to power turbo pumps in rocket motors, to deploy air bags, and in other cases where large volumes of gas are needed, and storing it as a pressurized gas is undesirable or impractical

9.1 Other Equipment's & Services:

Other Equipment Name	Amount
Steer	5
Underground reserve tank	50,000 litter (3 Tanks)
Reserve tank for fire	20,000 litter (3 Tanks)
Using water	50,000 litter (3 Tanks)

9.1 Fig: Safety device

CHAPTER TEN:

SWOT ANALYSIS

CHAPTER TEN: SWOT ANALYSIS

10.1 Swot Analysis of KDS GARMENTS Limited:

The full meaning of SWOT is Strength, Weakness, Opportunity and Threats. Strengths and weaknesses are influenced by the organizations internal environment and opportunities and threats are influenced by organizations external environment. SWOT analysis provides an opinion and judgment whether an organization's business condition is healthy or unhealthy.

Strength determines how well the company would be able to perform in the light of prevailing resources and competitive condition weaknesses determines lacking or different competitive capabilities in the key functional areas of the company. Opportunity of the company determines company's important avenues for profitable growth potential utility to sustain in the competitive advantage. Threats determine barriers to companies' profitability and competitive well-being.

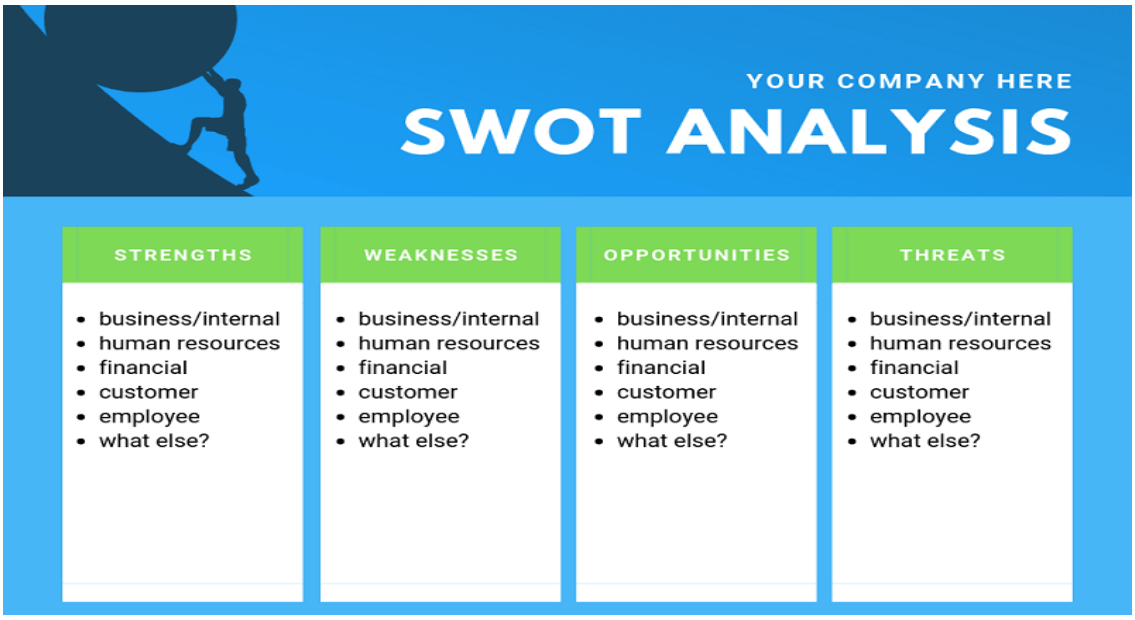


Fig 10.1: SWOT Analysis

10.2 Strengths of KDS Garments Company Limited:

- KDS Garments Company Limited is a compliance and certified organization which are the main reasons for attracting foreign buyers.
- The management is solely directed to maintain a culture for the betterment of the quality of the service.

- Worldwide renowned buyers are its customer (considered as friends)
- Employees are sharing good atmosphere in KDS Garments Company Limited. That is why it gives them the inspiration to work efficiently.
- KDS Garments Company Limited always searches new and better ways for improving productivity product quality.
- The top level management is very strong. They can take decision on time and manage all things in a systematic way.
- The labour forces of the company are cheap and readily available.
- A large factory area in BEPZA with adequate facilities.
- Own knitting and dyeing sections.

10.3 Weaknesses KDS Garments Company Limited:

- Mainly Produces knit products.

10.4 Opportunities of KDS Garments Company Limited:

- KDS Garments Company Limited has emphasized on market segmentation in orders on a regular basis. In this way, the company can gain potential market opportunities.
- KDS Garments Company Limited has planned to modernize logistic computer support. The best service could be entertained to the foreign buyers.
- Excellent opportunity to suit fashionable product besides basic product.
- Its large area can help it to set new and planned modernize factory.

10.5 Threats of KDS Garments Company Limited:

- Key competitors of KDS Garments Company Limited are offering competitive price which caused major threats to affect company business policy.
- Foreign low cost competitors who are investing in the country in this sector are also threats for KDS Garments Company Limited
- KDS Garments Company Limited is also affected by the government Regulations on export and import policy.
- It has to face political, social and environmental challenge.

CHAPTER ELEVEN:

CONCLUSION

CHAPTER ELEVEN: CONCLUSION

Ready-made garment is one of the golden of our country. The role of this sector in our socio-economic development cans hardly be over emphasized **KDS Garments Company Ltd.** is one of the most successful and recognized garments manufacturing company. It serves the company by way of earning foreign currency and also solves the unemployment problem in our country. the completion of the three month industrial attachment at KDS Garments Company Ltd. gave us the inspiration that factory is one of the appropriate destiny to implement the theoretical knowledge. From this industrial attachment we got the details idea about the factory environment, store, production, process, merchandising, total management etc. Due to secrecy act, all the data on KDS Garments Company Ltd. activities has not been supplied & hence this report excludes these chapters. some of the point in different chapter are not described as these were not available. All the Textile Engineers, technical & Non-technical persons are very sincere, co-operative and helpful. we wish good luck of them and also for this factory. At last, we can say that the management portion of all department of KDS Garments Company Ltd. is performing its job efficiently. in fact the all department are most important equally to increase the productivity by low cost and to maintain the well reputation. There is no doubt that KDS Garments Company Ltd. has created a good reputation in the global market by its quality product and service. It should maintain the quality and try to diverse its business. we are enough fortunate that we have got an opportunity of having a training in this mill. During the training period we receive co-operation & association from the authority full and found all man, machines & materials on appreciable working condition. All stuff & officers are very sincere & devoted their duties to achieve their goal.